# CytoSorb®

## Clinical Evidence in
## Acute Respiratory Distress Syndrome (ARDS)

| Name | Title | Aim | Number of patients | Type of study | Outcome |
|---|---|---|---|---|---|
| **Tomescu et al., Int J Artif Organs 2023; 46(12):605-617** | The potential role of extracorporeal cytokine removal with CytoSorb® as an adjuvant therapy in Acute Respiratory Distress Syndrome | Narrative review of the role of CytoSorb® in pts with acute respiratory distress syndrome (ARDS) | N/A | Review | The review supports the concept of CytoSorb® in patients with severe ARDS with improvement in lung function and oxygenation, attenuation of the inflammatory response as well as a positive effect on hemodynamic stabilization and metabolic parameters, while having a very good safety profile without major device-related adverse events being reported to date. |
| **Szigetváry et al., Biomedicines 2023; 11(11):3068** | Hemoadsorption as Adjuvant Therapy in Acute Respiratory Distress Syndrome (ARDS): A Systematic Review and Meta-Analysis | Systematic review of all published data reporting on the use of hemoadsorption (HA) in patients with acute respiratory distress syndrome (ARDS) | N/A | Review | The authors conclude that use of HA resulted in a significant improvement in oxygenation and a reduction in norepinephrine dose and C-Reactive Protein levels in patients treated with ARDS without any serious adverse events reported. |
| **Hayanga et al., Crit Care; 27(1):243** | Extracorporeal hemoadsorption in critically ill COVID-19 patients in VV ECMO: The CytoSorb® Therapy in COVID-19 (CTC) Registry | Final report from CTC Registry from 5 US centres in patients on veno-venous extracorporeal membrane oxygenation (vvECMO) and CytoSorb® for COVID-19 related acute respiratory distress syndrome (ARDS) | 100 | Registry | This multicentre registry is the largest systematically collected dataset looking at use of CytoSorb® in VV ECMO patients. Results confirm that the approach is easy-to-implement, safe, and associated with high survival rates (74% at 90 days compared to ELSO registry data 52%). Early start may improve outcomes by reducing organ support requirements and length of ICU stay. |

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| **Akil et al., J Clin Med 2022; 11(20):5990** | Use of CytoSorb® Hemoadsorption in Patients on Veno-Venous ECMO Support for Severe Acute Respiratory Distress Syndrome: A Systematic Review | Systematic review of all published data reporting on the use of CytoSorb® in patients with acute respiratory distress syndrome (ARDS) and veno-venous extracorporeal membrane oxygenation (vvECMO) | N/A | Systematic Review | Despite low patient numbers, there was a trend towards effective inflammatory biomarker reduction, decreased vasopressor dosage and improved lung function. Exploratory analyses suggest that these clinical benefits may also translate into lower mortality. Early initiation of CytoSorb® in the ECMO circuit might offer a new approach to enhance lung rest and promote recovery in these difficult to treat patients. |
| **Kogelmann et al., J Int Care Soc 2020; 21(2):183-190** | Use of hemoadsorption in sepsis-associated ECMO-dependent severe ARDS: A case series | Included consequtive pts with sepsis shock and ARDS treated with CytoSorb®, continuous renal replacement therapy and veno-venous extracorporeal membrane oxygenation (vvECMO) | 7 | Case Series | Pts had a significant stabilization in hemodynamics, reduction in hyperlactatemia, significant improvement in lung function and ventilation invasiveness. Severity of illness and overall organ dysfunction showed a considerable improvement during the course of the combined treatment while observed mortality was only half as predicted by APACHE II. |

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